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Applicant : Michael Eric Flanagan Date: 6/13/07
Serial No. : 10/804,824 Art Unit: 3754
Response to Office Action of February 13, 2007

Remarks/Arguments

Favorable reconsideration is respectfully requested in view of the above amendments and the following discussion.

The present invention relates to pipe stoppers, an example of which is shown in FIG. 16 of the present application. The pipe stopper of the present invention is of a type that has a flexible seal interposed between peripheral surfaces of two plates. A projection extends from a first one of the two plates and passes through an aperture in the second plate. The seal is actuated into a sealing position by a force acting on the projection that tends to urge the two plates toward one another to deform the flexible seal. Typically, pipes to be stopped by such a pipe stopper are located in a cramped environment, such as a horizontally extending pipe located at the bottom end of a manhole in a sewage system, as illustrated in FIG. 19. Clearly, when maneuvering a pipe stopper into the pipe to be stopped, the task is more easily achieved if the pipe stopper is relatively short in length.

The pipe stopper of the present invention has a flexible seal located between peripheral surfaces of a pair of plates, and forms a seal against a pipe under the action of a lever-operated cam

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which forces the two plates toward one another. In order for the pipe stopper to provide a reactive force to tilting of the pipe stopper from its operative position while the lever is actuated, the pipe stopper is provided with a member (112) extending from a remote peripheral surface of one of the plates. The member extends from the plate only at a position that provides the necessary reaction when the cam is being actuated to form the seal, as set forth in present claim 1. The provision of the member (112) extending from one of the plates at a position that provides the necessary reaction enables the pipe stopper of the present invention to have a relatively short length while still establishing the desired reactive force.

It should be noted that the pipe stopper is typically used in pipes that are not manufactured to high tolerances, and (in the case of PVC pipes) pipes that may be deformed (by as much as 6%). Consequently, if the member (as set forth in claim 1) were to be extended from the whole peripheral surface of a plate (in the manner of Tuthill or Thyssen), in some instances this would render the correct location of the pipe stopper within a pipe difficult, if not impossible. Thus, it should be understood that because the member of the claimed pipe stopper extends from only a part of a remote peripheral surface of a plate, it provides the necessary

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reaction when the cam is being actuated to form the seal, and allows the pipe stopper to be correctly positioned, even in relatively roughly made pipes or deformed PVC pipes.

Claims 1 and 2 have been rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tuthill (GB 1231320). These claims now set forth "a member rigidly secured to or integral with only a part of a remote peripheral surface of one of the plates". Further, these claims set forth that the member extends from the plate "at a position such that when the pipe stopper is located within a pipe said member provides a reactive force to tilting of the pipe stopper from its operative position while said lever is pivoted to its second orientation to expand the flexible seal."

There is no disclosure in Tuthill of any such member for performing any such function. Indeed, the Tuthill device is exceptionally long in comparison to the diameter of the device and cannot anticipate the structural feature set forth in present claim 1, which structural feature enables the present pipe stopper to be constructed with a short length relative to the diameter of the pipe stopper. Accordingly, it is respectfully submitted that Tuthill reveals nothing which can anticipate the subject matter of claim 1, and it is respectfully requested that the rejection based upon Tuthill be withdrawn.

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Claims 1 and 2 have been rejected under 35 U.S.C. 102(b) as being clearly anticipated by Thyssen (DE 3910732). These claims now set forth "a member rigidly secured to or integral with only a part of a remote peripheral surface of one of the plates". Further, these claims set forth that the member extends from the plate "at a position such that when the pipe stopper is located within a pipe said member provides a reactive force to tilting of the pipe stopper from its operative position while said lever is pivoted to its second orientation to expand the flexible seal." There is no disclosure in Thyssen '732 of any such member for performing any such function. Indeed, the Thyssen '732 device is exceptionally long in comparison to the diameter of the device and cannot anticipate the structural feature set forth in present claim 1, which structural feature enables the present pipe stopper to be constructed with a short length relative to the diameter of the pipe stopper. Accordingly, it is respectfully submitted that Thyssen '732 reveals nothing which can anticipate the subject matter of claim 1, and it is respectfully requested that the rejection based upon Thyssen '732 be withdrawn.

Claim 1 has been rejected under 35 U.S.C. 102(b) as being clearly anticipated by Thyssen (DE 3718619). For the same reasons as set forth above in connection with the rejection based upon

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Thyssen '732, it is respectfully submitted that Thyssen '619 reveals nothing which can anticipate the subject matter of claim 1, and it is respectfully requested that the rejection based upon Thyssen '613 be withdrawn.

Claims 20 through 23 and 26 have been rejected under 35 U.S.C. 102(b) as being anticipated by Boundy. With respect to claims 20 through 23, each of these claims sets forth a projection rigidly secured to or integral with a first of a pair of co-axial plates, and a lever rigidly attached to or integral with a cam and pivotally mounted about an axis through the projection. Boundy discloses an entirely different construction operated in an entirely different manner and cannot be said to anticipate the subject matter of claims 20 through 23. Thus, the device of Boundy has a sealing head 5 comprised of a resilient sealing ring 8 retained between adjacent plates 6 and 7. A control arm 14 is pivotally attached at its lower end to a wedge shaped member 13. The wedge shaped member is located within a slot formed in the central member 9 secured at one end to the plate 6. The opposite end of the central member is pivotally connected to a support arm 2. The central member passes through an aperture in the second plate 7 and through a sleeve 12 located between the second plate 7 and the wedge shaped member 13.

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During positioning of the sealing head 5 of Boundy, down through a vertical riser, the central member 9 extends downwardly along a similar line to the support arm 2, as shown in FIG. 2. When the sealing head is to be rotated around to a horizontal orientation, for positioning in a sewage pipe, the central member 9 is pivoted about its connection to the support arm 2 by a force applied via the control arm 14 and wedge shaped member 13 (see column 4, lines 61-68). During this operation, it should be noted that the wedge shaped member 13 pivots about its connection (16) to the control arm 14. Then, in order for the sealing ring to seal against the wall of the sewage pipe (as shown in FIG. 3) the wedge shaped member is pulled (by means of the control arm 14) causing it to slide within its slot 10 and force the sleeve 12 to push the second plate 7 towards the first plate 6 (see column 5, line 10). Thus, it is essential to the operation of the device of Boundy that the wedge shaped member be pivotally connected to the control arm 14, and the cam means (wedge shaped member 13) cannot be rigidly connected to the lever (control arm 14) as set forth in present claim 20.

In contradistinction, claims 20 through 23 set forth an entirely different arrangement wherein a lever is rigidly attached to or integral with a cam and pivotally mounted about an axis

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through a projection secured to or integral with one of a pair of co-axial plates. Actuation of the seal is by pivoting of the lever to rotate the cam. There is no similarity between the mechanism of Boundy and the combination of elements set forth in the present claims. Accordingly, Boundy cannot anticipate the subject matter of the present claims, and it is respectfully requested that the rejection based upon Boundy be withdrawn.

With respect to claim 26, the claim includes "a member rigidly secured to or integral with only a part of a remote peripheral surface of one of the plates". Further, the claim sets forth that the member extends from the plate "at a position such that when the pipe stopper is located within a pipe said member provides a reactive force to tilting of the pipe stopper from its operative position while said lever is pivoted to its second orientation to expand the flexible seal." There is no disclosure in Boundy of any such member for performing any such function. Accordingly, it is respectfully submitted that Boundy cannot anticipate the subject matter of claim 26 and it is respectfully requested that the rejection based upon Boundy be withdrawn.

Claims 1 through 8, 10, 24 and 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Boundy in view of VerNooy. The shortcomings of Boundy are fully discussed above and are

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equally applicable in regard to these claims. VerNooy provides no teaching with respect to a cam means, or a lever pivotable about an axis through a projection to actuate a sealing head. VerNooy relates to a pipe plugger that has a roller (20) mounted between plates (21, 22). The roller engages the inside of a pipeline to support the weight of the plug means as it is positioned in the pipe (see column 2, lines 61-64, and claim 1, at column 6, lines 39-45). The sealing element (36) of VerNooy is of a type that is inflated to plug a pipe (column 4, lines 3-4), and it appears from the drawing, at least, that the roller (20) allows the sealing element to be positioned approximately at the correct height in the pipe. However, there is no teaching or suggestion in VerNooy of the roller acting to stop the plugger from tilting from its operative position, let alone providing a reactive force to tilting of the pipe plugger from its operative position in response to pivoting a lever of the pipe plugger to expand a flexible seal, as set forth in the present claims. Indeed, no such mechanism is required in the device of VerNooy since that device relies upon inflation to actuate the seal, and the inflation generates no forces which would require a reactive force. Accordingly, VanNooy suggests nothing which can be combined with Boundy to render obvious the subject matter of claims 1 through 8, 10, 24 and 25,

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and it is respectfully requested that the rejection based upon a combination of VerNooy with Boundy be withdrawn.

Claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Boundy in view of VerNooy as applied in the rejection of claims 1 through 8, 10, 24 and 25, and further in view of Hessian. The shortcomings of Boundy and VerNooy are fully discussed above and are equally applicable in regard to claim 11. Hessian merely illustrates a telescoping handle in a capping device and discloses nothing which can overcome the deficiencies of Boundy and VerNooy in rendering obvious the subject matter of claim 11. Accordingly, it is respectfully submitted that the proposed combination of Boundy, VerNooy and Hessian is untenable in rendering obvious the subject matter of claim 11 and it is respectfully requested that the rejection based upon that proposed combination be withdrawn.

New claims 29 through 31 set forth a combination of elements, some of which elements have been discussed in connection with the rejections of claim 1 and claim 20, and which render claims 29 through 31 patentable. In addition, these claims set forth that the projection of the pipe stopper defines a pair of recesses concentric with the axis through the projection (about which the lever is pivotable), and a pair of slots defined in a face of the

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projection which communicate with a respective one of the recesses, and the lever carries two pivot pins each of which has an enlarged head that is adapted to slide through a respective one of said slots and to be formed by a reduced number of components and assembled in a simple manner as shown and described in connection with FIGS. 5 through 7.

The remaining references cited by the Examiner have been reviewed and are deemed to add nothing by way of anticipation or rendering obvious the subject matter of the present claims.

It is respectfully submitted that the claims set forth subject matter which is neither anticipated nor rendered obvious by the references and it is respectfully requested that the claims be allowed and the application be passed to issue.

Respectfully submitted,



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